399-2-14 (C6191)
Log Data Report

Borehole Information:

Borehole:	399-2-14 (C6191)		Site:	300-FF-5	
Coordinates (WA St Plane)		GWL[1] (ft):	30.3	GWL Date:	06/17/08
North (m)	East (m)	Drill Date	TOC[2] Elevation	Total Depth (ft)	Type
116070.3	594245.2	06/16/08	Unknown	58.5	Sonic

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	0.6	7 5/8	6 7/8	3/8	-0.6	56.0

Borehole Notes:

Casing data, and total depth were reported by the site geologist. Logging engineer measured depth to water with an e-tape. Casing diameters were measured using a steel tape and rounded to the nearest 1/16-in. The zero reference is the ground surface.

Logging Equipment Information:

Logging System:	Gamma 4 L		Type:	60% HPGe SGLS
			Serial No.:	47TP32211A
Effective Calibration Date:	12/31/07	Calibration Reference:	HGLP-CC-027	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Logging System:	Gamma 4 H		Type:	NMLS
			Serial No.:	H310700352
Effective Calibration Date:	11/06/07	Calibration Reference:	HGLP-CC-021	
		Logging Procedure:	HGLP-MAN-002, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat
Date	06/17/08	06/17/08
Logging Engineer	Pearson	Pearson
Start Depth (ft)	58.0	2.0
Finish Depth (ft)	0.5	7.5
Count Time (sec)	200	200
Live/Real	R	R
Shield (Y/N)	N	N
MSA Interval (ft)	0.5	0.5
Log Speed (ft/min)	N/A	N/A
Pre-Verification	DL461CAB	DL461CAB
Start File	DL461000	DL461116
Finish File	DL461115	DL461127
Post-Verification	DL461CAA	DL461CAA
Depth Return Error (in.)	0	0
Comments	No fine gain adjustment made.	Repeat Section

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	3	4 Repeat
Date	06/17/08	06/17/08
Logging Engineer	Pearson	Pearson
Start Depth (ft)	0.0	0.0
Finish Depth (ft)	29.25	3.0
Count Time (sec)	15	15
Live/Real	R	R
Shield (Y/N)	N	N
MSA Interval (ft)	0.25	0.25
Log Speed (ft/min)	N/A	N/A
Pre-Verification	DHF32CAB	DHF32CAB
Start File	DHF32000	DHF32118
Finish File	DHF32117	DHF32130
Post-Verification	DHF32CAA	DHF32CAA
Depth Return Error (in.)	N/A	0
Comments	None.	Repeat Section

Logging Operation Notes:

Data were collected using Gamma 4, HO 68B-3573. SGLS pre- and post-survey verification measurements were acquired in the Amersham KUTh-115 field verifier. Maximum logging depth achieved was 58.0 ft before the sonde un-weighted. A centralizer was installed on the sonde. NMLS pre- and post-survey verification measurements were acquired in the standard field verifier. Maximum logging depth achieved was 29.25 ft.

Analysis Notes:

Analyst:	LEGLER	Date:	07/29/08	Reference:	GJO-HGLP 1.6.3, Rev. 0

SGLS pre- and post-survey verification spectra met the acceptance criteria for the established system. NMLS pre- and post-survey verification spectra met the acceptance criteria for the established system, but spectra file DHF32CAB had measurements above the upper control limit for counts per second (cps).

A casing correction for a 3/8-in. thick casing was applied from ground surface to 56 ft where casing ends, leaving 2 ft of open borehole uncorrected. A water correction was also applied during analysis from 30.3 ft to total logged depth of borehole.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual peaks and count rates. Concentrations were calculated using an EXCEL template identified as G4LDec07.xls using an efficiency function and corrections for casing, dead time and water as determined by annual calibrations. NMLS spectra were processed in batch mode in APTEC SUPERVISOR to identify counts. Count rates were calculated using an EXCEL template identified as G4HNov07.xls. NMLS data are presented in counts per second (cps), because no calibration data is available for a 6 7/8-in. inner diameter borehole casing.

Results and Interpretations:

Cs-137, U-235, and U-238 (Pa-234m) were detected sporadically throughout this borehole. Inspection of the individual spectra at the various depths indicates that these detections are statistical fluctuations associated with the processing software and are not valid.

The KUT repeat plots indicate good repeatability. The moisture repeat plot indicates good repeatability.

List of Log Plots:

Depth Reference is ground surface

Manmade Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma & Dead Time
Total Gamma & Moisture
Repeat Section of Natural Gamma
Moisture Repeat Section

[1] GWL – groundwater level
[2] TOC – top of casing

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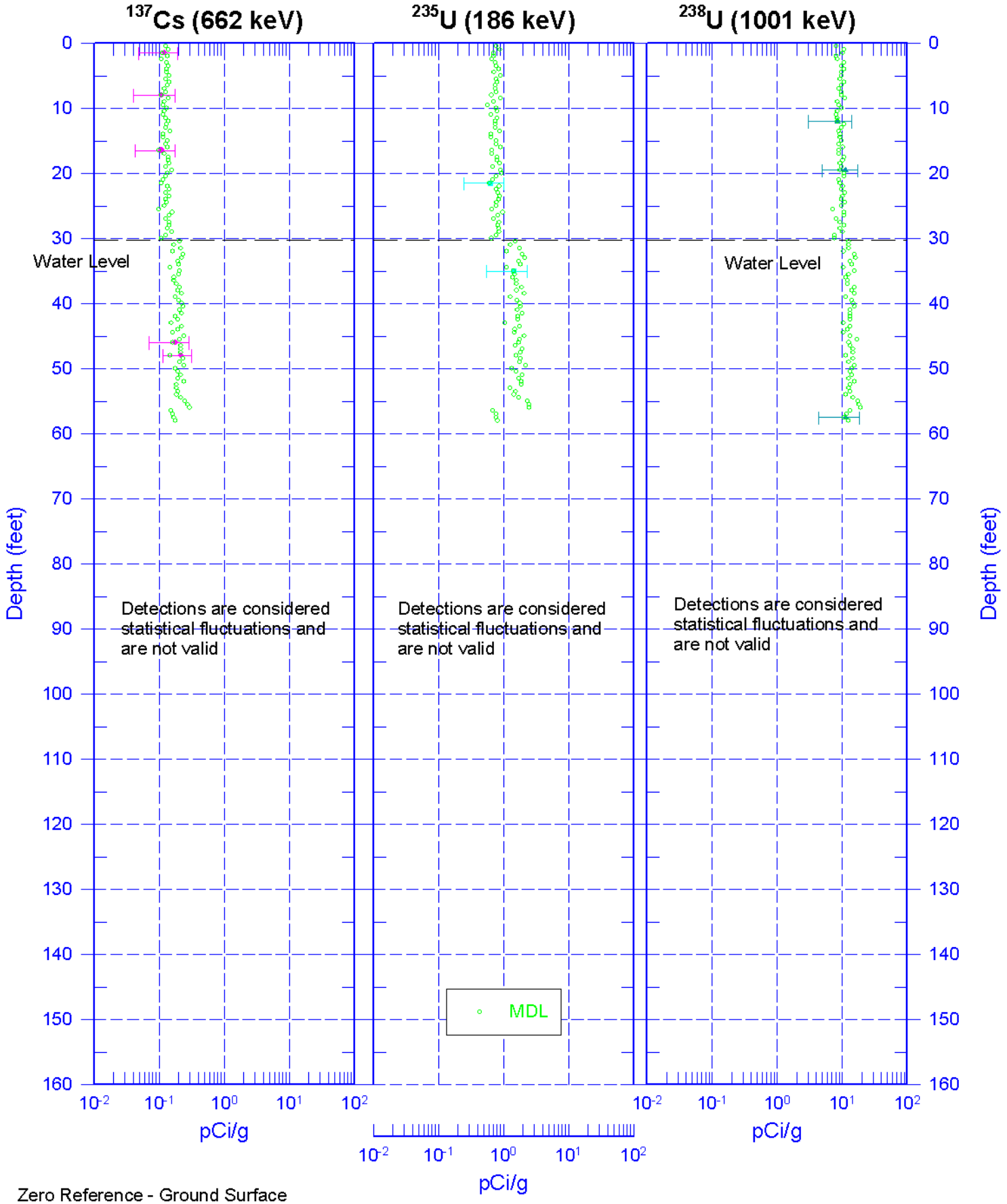
399-2-14 (C6191)
Manmade Radionuclides



Zero Reference - Ground Surface

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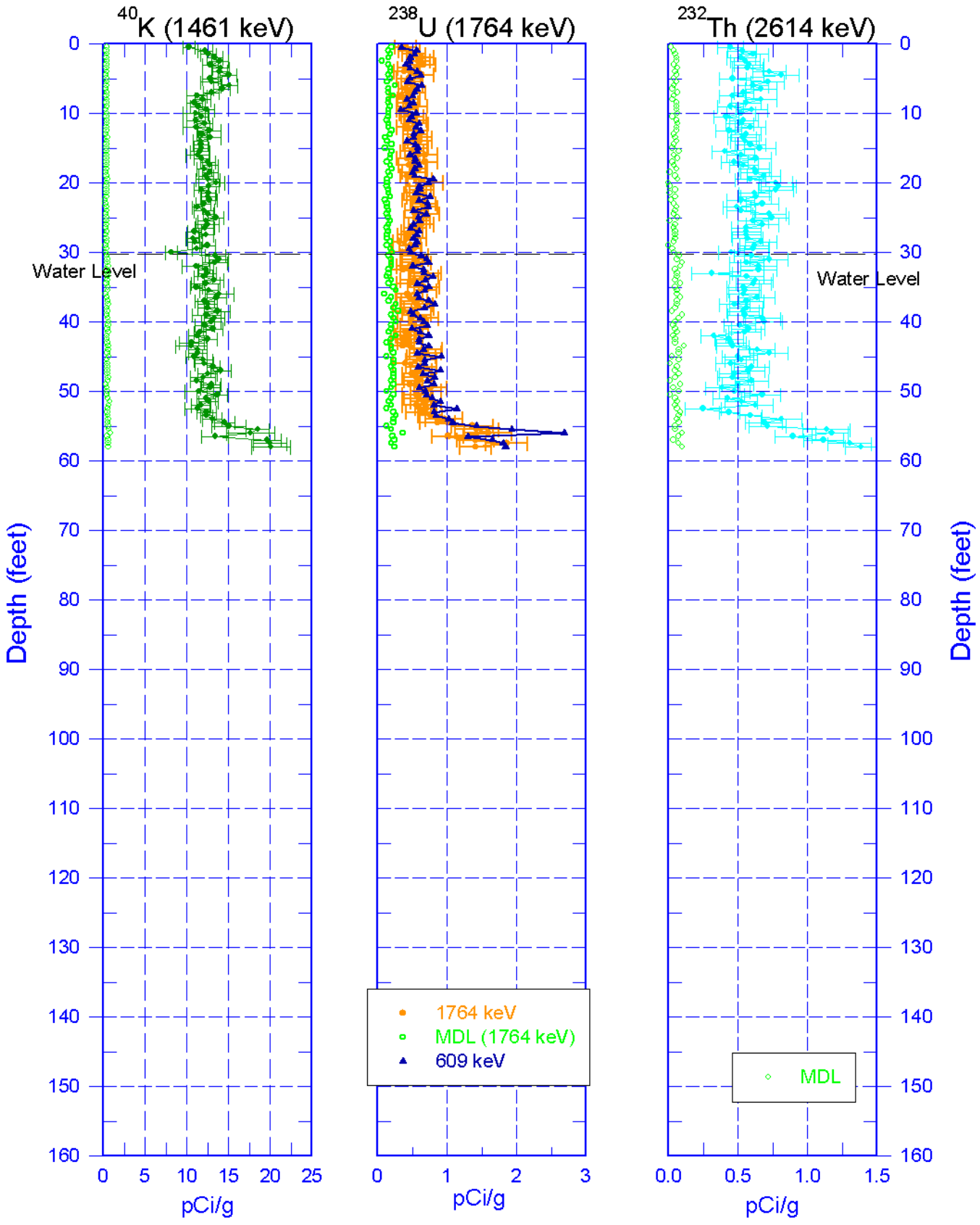
399-2-14 (C6191)
Natural Gamma Logs



Zero Reference - Ground Surface

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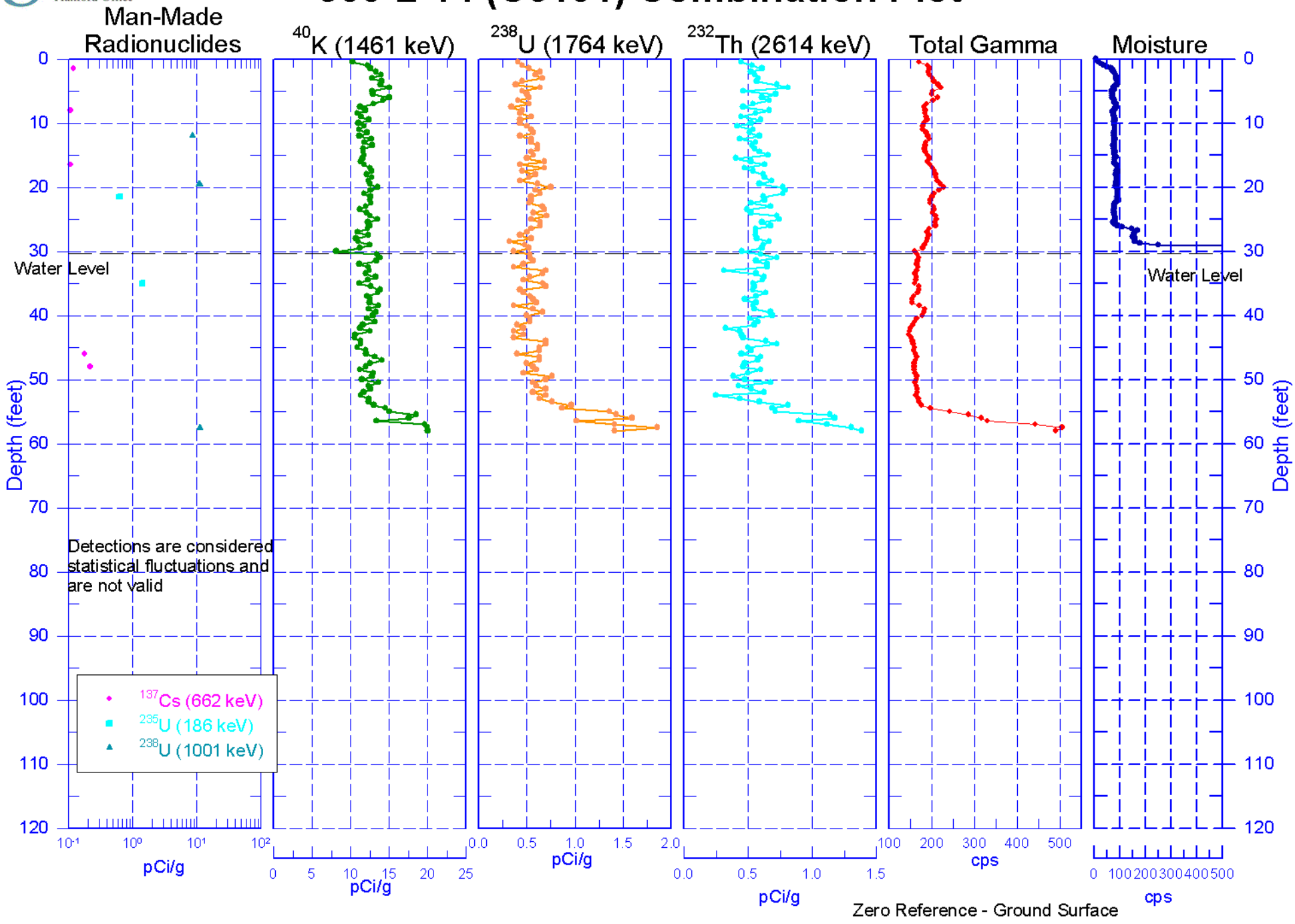
399-2-14 (C6191) Combination Plot



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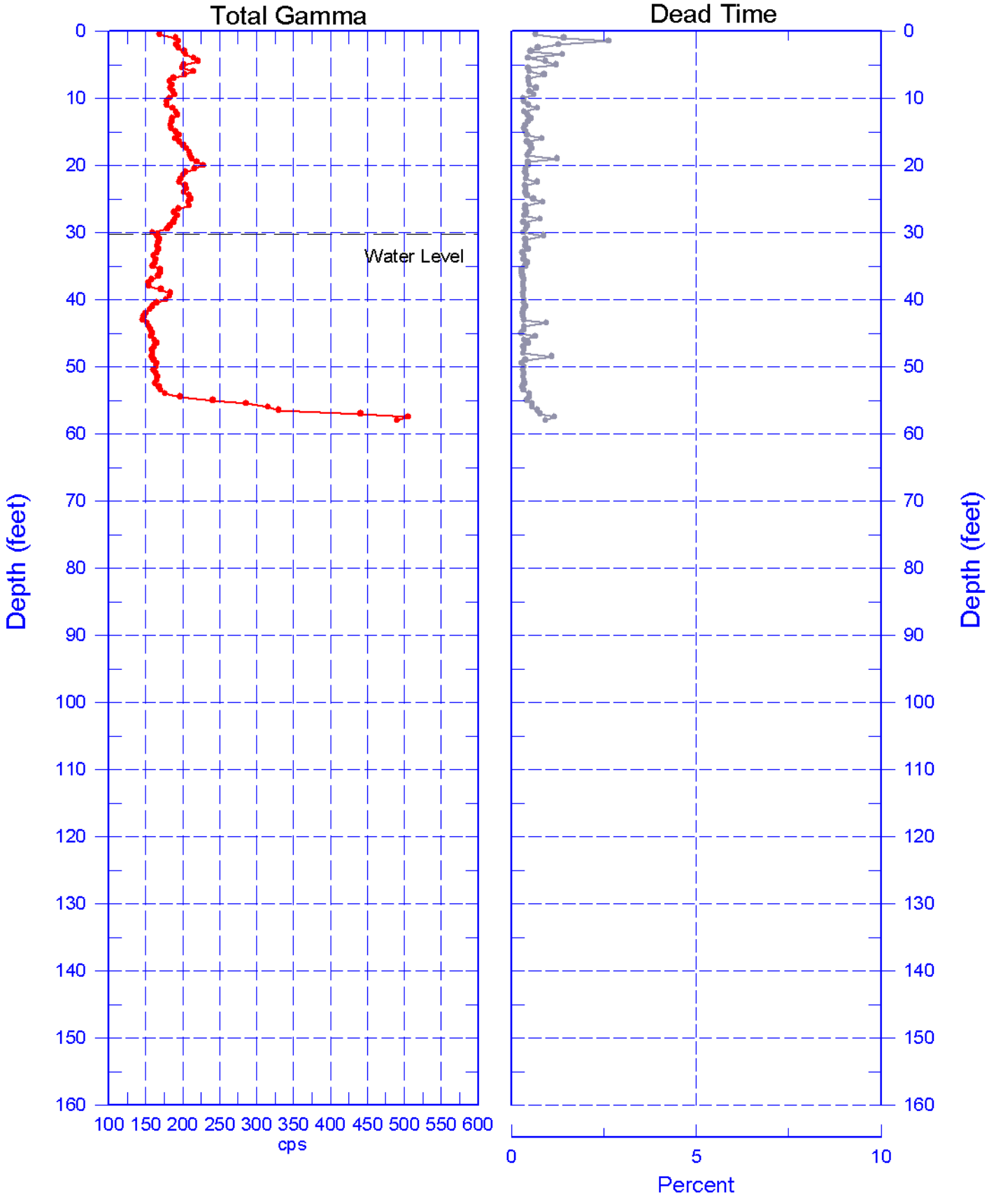
399-2-14 (C6191)
Total Gamma & Dead Time



Reference - Ground Surface

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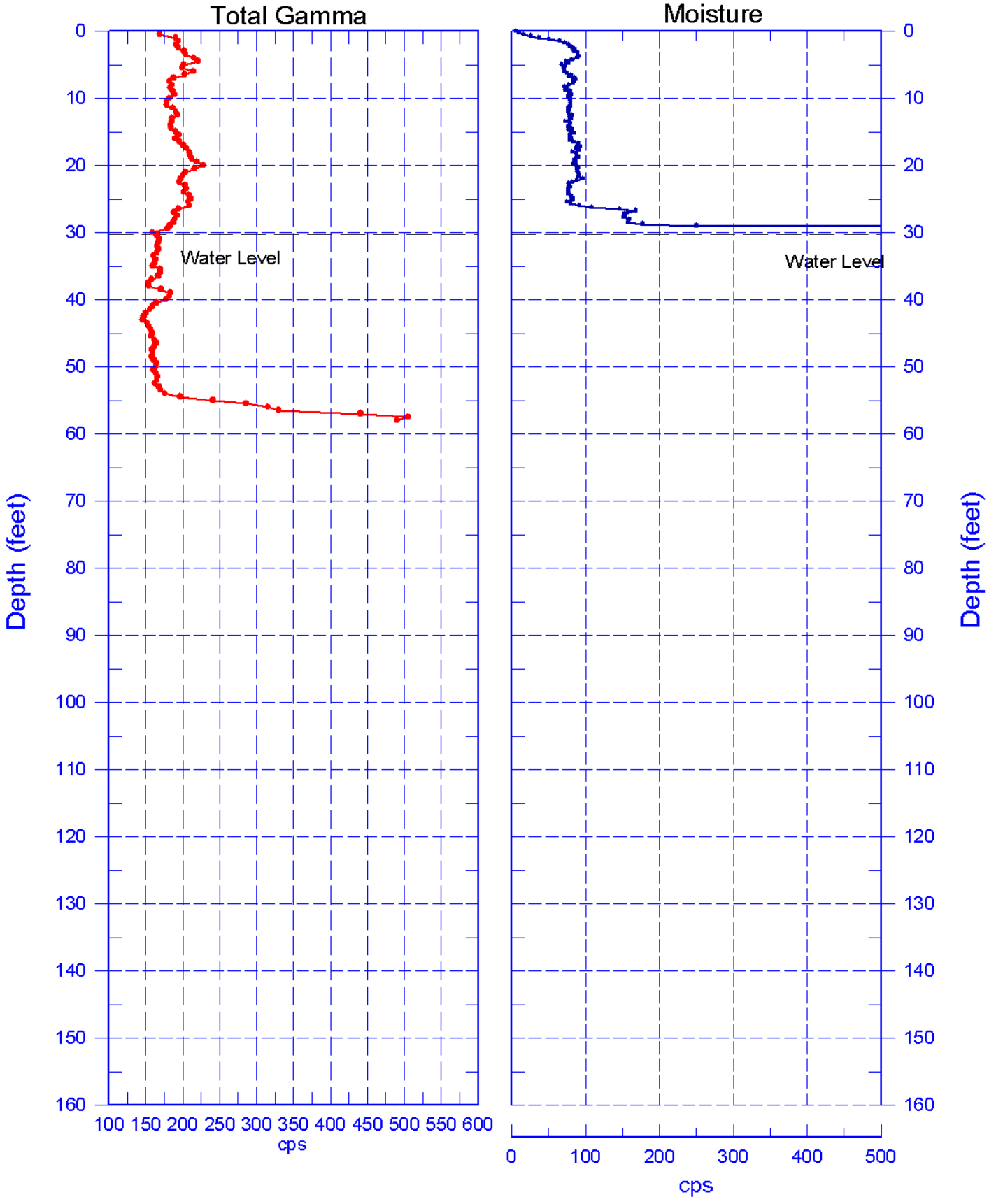
399-2-14 (C6191)
Total Gamma & Moisture



Reference - Ground Surface

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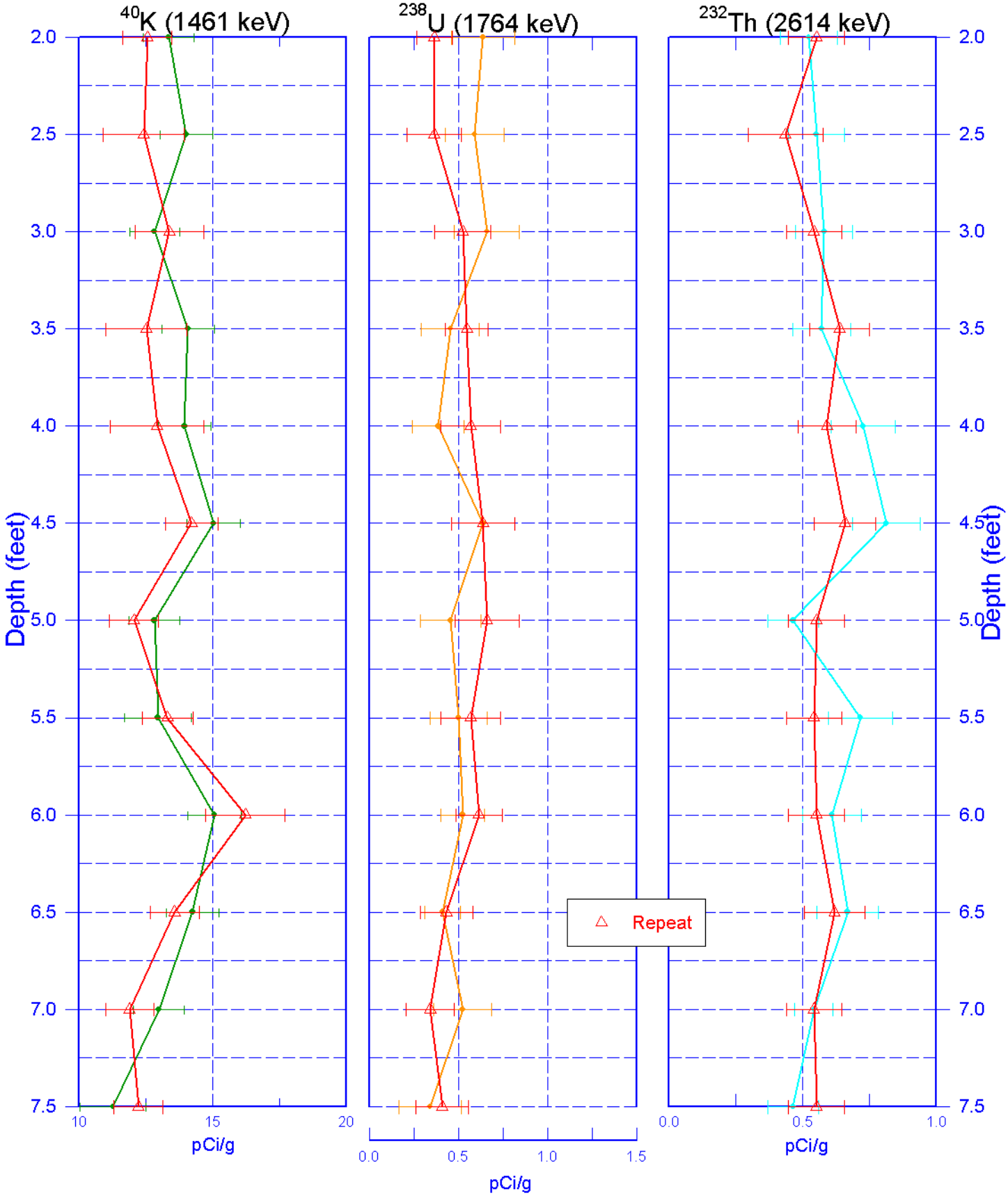
399-2-14 (C6191)

Repeat Section of Natural Gamma Logs



Zero Reference - Ground Surface

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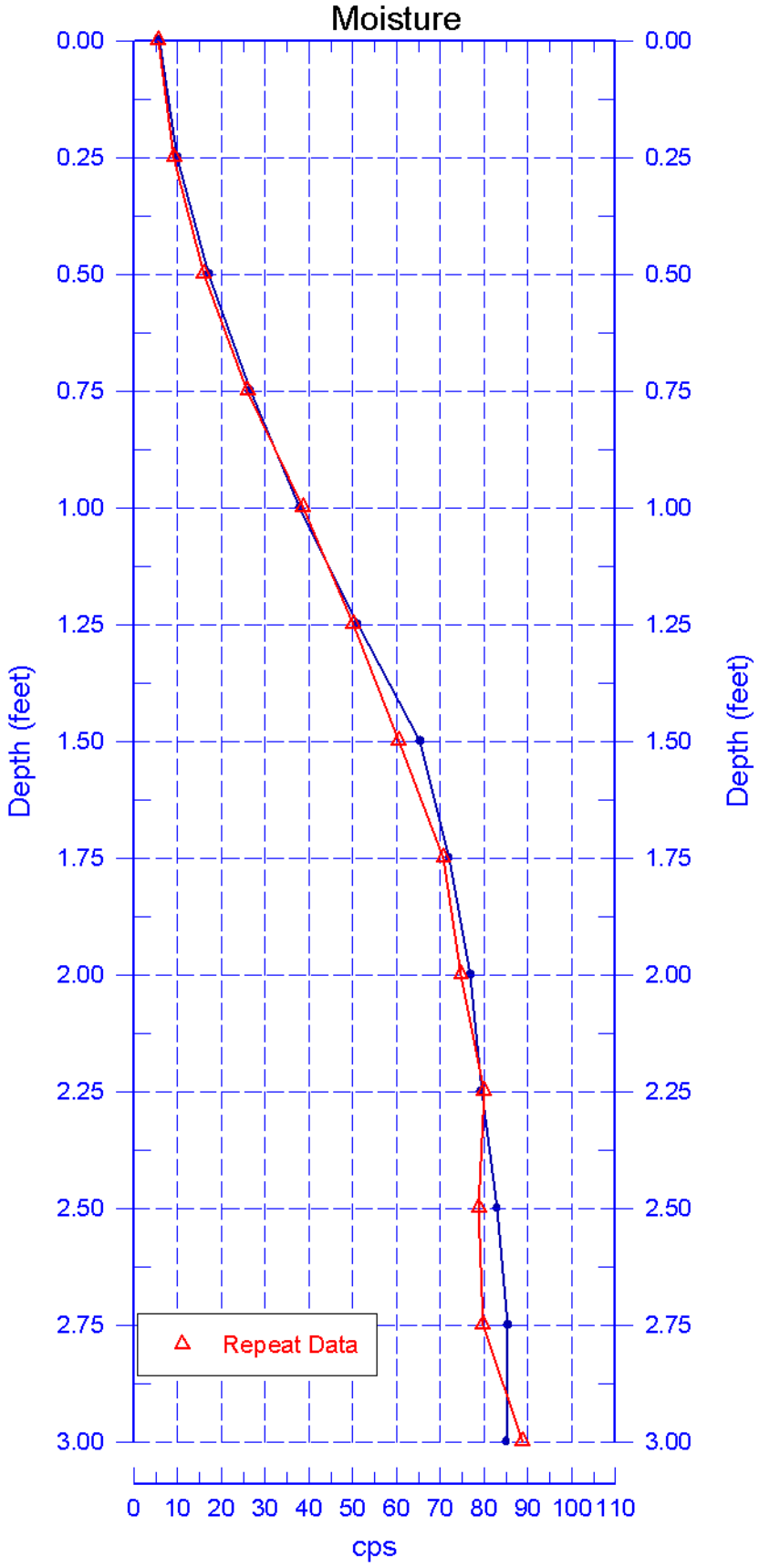
399-2-14 (C6191)
Moisture Repeat Section



Reference - Ground Surface